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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/713,641	11/13/2003	Kevin J. Cummings	EH-11005 (03-539)	1649
34704	7590	08/09/2005	EXAMINER	
BACHMAN & LAPOINTE, P.C. 900 CHAPEL STREET SUITE 1201 NEW HAVEN, CT 06510			VERDIER, CHRISTOPHER M	
			ART UNIT	PAPER NUMBER
			3745	

DATE MAILED: 08/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/713,641

Applicant(s)

CUMMINGS ET AL

Examiner

Christopher Verdier

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 May 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 12-15 and 20-22 is/are allowed.
- 6) ☒ Claim(s) 1,5,6,9,11,17 and 19 is/are rejected.
- 7) ☒ Claim(s) 2-4,7,8,10, 16 and 18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11-13-03, 5-31-05 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Applicants' Amendment dated May 31, 2005 has been carefully considered but is non-persuasive. Claims 1-22 are pending. The replacement sheet of drawings for figure 2 is approved by the examiner. The specification has been amended to correct the informalities set forth in the first Office action. The claims have been amended to correct the informalities set forth in the first Office action. Correction of the above matters is noted with appreciation.

With regard to the rejection of claims 1, 5-6, and 9 under 35 U.S.C. 102(b) as being anticipated by Honda 6,092,987, Applicant has amended claims 1 and 9 to recite a bleed plenum and has argued that this defines over Honda '987. This argument is not persuasive, because figure 2 of Honda shows an annular chamber 32 (see also column 4, lines 15-17) that is a bleed plenum. With regard to Applicants' argument that the aft and fore joints marked with letters E and F point to areas where the housing 42 is sealed to an adjacent shroud ring but not secured thereto, the aft and fore joints E and F, respectively, are broadly considered to be joints because they are areas of abutment between the structural case 40/42, the structural hub D, and the joined one of the shroud rings B.

Applicants' argument with regard to the rejection of claims 1, 5-6, and 9 under 35 U.S.C. 103(a) as being unpatentable over Chlus 6,802,691 in view of Honda 6,092,987 is the same as set forth above with regard to Honda '987. This argument is not persuasive for the same reason, namely that figure 2 of Honda shows an annular chamber 32 (see also column 4, lines 15-17) that is a bleed plenum. Additionally, the primary reference to Chlus has an unnumbered annular bleed plenum radially outward of reference numeral 56, because figures 5-6 of Chlus show an

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annular bleed valve actuation system near 24, which is used in the gas turbine engine 10 of figure 1.

With regard to Malmberg 2005/0008486, Applicant has argued that it is not clear whether the citation of Malmberg for teaching a compressor with a structural case 76 that carries fan exit guide vanes 77 is intended to replace the structural case of Honda as it is differently positioned. This argument is not persuasive, because the first Office action clearly indicates that Malmberg is relied upon to teach a structural hub that carries plural fan exit guide vanes, for the purpose of guiding working fluid from the compressor. The first Office action does not include any statement that the structural case of Honda or Chlus is replaced. With regard to Applicants' argument that it is clear from figure 2 of Malmberg that the element having the valve ports above reference numeral 84 is in floating relation to the shroud sealed by O-rings as is Honda, and that Malmberg does not suggest the claimed bleed plenum, these arguments are not persuasive, because Malmberg is not relied upon to teach these features, but is relied upon to teach a structural case 76 that carries fan exit guide vanes 77, for the purpose of guiding working fluid from the compressor.

Claim Objections

Claims 16 and 18 are objected to because of the following informalities: Appropriate correction is required.

In claims 16 and 18, line 2, -- of the shroud rings -- should be inserted after "one".

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 5-6, 9, 17, and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Honda 6,092,987. Honda (please refer to the enlargement of figure 2 at the end of this action) discloses a gas turbine engine comprising a fan 22, a compressor 24 along a core flow path 18 and having a plurality of rows of unnumbered blades in figure 2, a plurality of rows of unnumbered vanes in figure 2, and a plurality of shroud rings A, B, a bleed one B of which defines a plurality of bleed ports C to an annular bleed plenum 32 (see also column 4, lines 15-17), a structural hub D downstream of the shroud rings and secured relative to the shroud rings (Note that the structural hub D is inherently secured to some portion of the engine, because high pressure working fluid passes through the core flow path and structural case 28 rests on and moves about the structural hub, therefore the structural hub D must be secured to some portion of the engine to prevent downstream movement of the structural hub. Note also that the phrase “secured relative to the shroud rings” does not require that the structural hub D is secured to the shroud rings, but only that it is secured relative to the shroud rings.), a structural case 40/42 extending from an aft joint E with the structural hub to a fore joint F with a joined one of the shroud rings B and having a plurality of valve ports 30 from the bleed plenum, at least a portion of the structural case extending structurally between the fore and aft joints, and a valve element

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62 shiftable between a first condition in which the valve element blocks communication through the valve ports, and a second condition in which the valve element does not block the communication. The valve element is shiftable via combined circumferential rotation and longitudinal translation. The valve element carries an outboard aft seal 72 and an inboard fore seal 74 for sealing with the structural case in the first condition. At least a portion of the structural case (the inner circumferential rail shown in figure 4b) extends as a continuous piece between the fore and aft joints.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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Claims 1, 5-6, 9, 17, and 19 are also rejected under 35 U.S.C. 103(a) as being unpatentable over Chlus 6,802,691 in view of Honda 6,092,987. Chlus (please refer to the enlargement of figure 2 at the end of this action) discloses a gas turbine engine comprising a fan 12, a compressor 14 along a core flow path 16 and having a plurality of rows of unnumbered blades in figure 1, a plurality of rows of unnumbered vanes in figure 1, and a plurality of shroud rings A, B, a bleed one B of which defines a bleed port C to an unnumbered annular bleed plenum (radially outward of reference numeral 56), a structural hub 70 downstream of the shroud rings and secured relative to the shroud rings (Note that the structural hub 70 is inherently secured to some portion of the engine, because high pressure working fluid passes through the core flow path and the structural case shown generally at 20 rests on and moves about the structural hub, therefore the structural hub 70 must be secured to some portion of the engine to prevent downstream movement of the structural hub. Note also that the phrase "secured relative to the shroud rings" does not require that the structural hub 70 is secured to the shroud rings, but only that it is secured relative to the shroud rings.), a structural case shown generally at 20 extending from an aft joint E with the structural hub to a fore joint F with a joined one of the shroud rings B and having a valve port 20 from the bleed plenum, at least a portion of the structural case extending structurally between the fore and aft joints, and a valve element 24 shiftable between a first condition in which the valve element blocks communication through the valve port, and a second condition in which the valve element does not block the communication. The valve element is shiftable via combined circumferential rotation and longitudinal translation (note that the term "is shiftable" is a recitation of intended use. A recitation of the intended use of the claimed invention must result in a structural difference

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between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 370 F.2d 576, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 312 F.2d 937, 939, 136 USPQ 458, 459 (CCPA 1963)). The valve element carries an outboard aft seal 44 and an inboard fore seal 48 for sealing with the structural case in the first condition. At least a portion of the structural case (the rear portion) extends as a continuous piece between the fore and aft joints.

However, Chlus does not disclose that the bleed port C is plural bleed ports, and does not disclose that the valve port 20 is plural valve ports.

Honda (figure 2) shows a gas turbine engine bleed valve system, whereby plural bleed ports C are provided, and plural valve ports 30 are provided, for the purpose of allowing working fluid to be bypassed from the compressor flow path through multiple ports.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to form the gas turbine engine of Chlus such that the bleed port C is plural bleed ports, and such that the valve port 20 is plural valve ports, as taught by Honda, for the purpose of allowing working fluid to be bypassed from the compressor flow path through multiple ports.

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Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Honda 6,092,987 in view of Malmborg 2005/0008486. Honda discloses a gas turbine engine substantially as claimed as set forth above, including a structural hub D, but does not disclose that the structural hub carries plural fan exit guide vanes.

Malmborg shows a gas turbine engine having a compressor with a structural case 76 that carries fan exit guide vanes 77, for the purpose of guiding working fluid from the compressor.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to form the gas turbine engine of Honda such that the structural hub carries plural fan exit guide vanes, as taught by Malmborg, for the purpose of guiding working fluid from the compressor.

Claim 11 is also rejected under 35 U.S.C. 103(a) as being unpatentable over Chlus 6,802,691 and Honda 6,092,987 as applied to claim 9 above, and further in view of Malmborg 2005/0008486. The modified gas turbine engine of Chlus shows all of the claimed subject matter except for the structural hub 70 carrying plural fan exit guide vanes.

Malmborg shows a gas turbine engine having a compressor with a structural case 76 that carries fan exit guide vanes 77, for the purpose of guiding working fluid from the compressor.

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It would have been further obvious at the time the invention was made to a person having ordinary skill in the art to form the modified gas turbine engine of Chlus such that the structural hub carries plural fan exit guide vanes, as taught by Malmborg, for the purpose of guiding working fluid from the compressor.

Allowable Subject Matter

Claims 12-15 and 20-22 are allowed.

Claims 2-4, 7-8, 10, 16, and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicant is reminded to correct the informalities in claims 16 and 18.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher Verdier whose telephone number is (571) 272-4824. The examiner can normally be reached on Monday-Friday from 10:00-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward K. Look can be reached on (571) 272-4820. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

C.V.
August 4, 2005


Christopher Verdier
Primary Examiner
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